Abstract

Logic basic cell, logic basic cell array and logic device

A logic basic cell contains a first logic function block and a second logic function block for the logic combination of a first input signal and a second input signal in accordance with a predeterminable first or second logic subfunction, and a first logic transistor coupled to the first logic function block, having a gate terminal, at which a third input signal can be provided, and having a source/drain terminal at which the output signal can be provided. Furthermore, a second logic transistor coupled to the second logic function block is provided, having a gate terminal, at which a complementary signal with respect to the third input signal can be provided, and having a source/drain terminal, which is coupled to the source/drain terminal of the first logic transistor.

List of reference symbols

100 Logic basic cell
101 First data signal path
101a First n-MOS partial path
101b Second n-MOS partial path
102 Second data signal path
102a First p-MOS partial path
102b Second p-MOS partial path
103 First data signal input
104 Second data signal input
105 Third data signal input
106 Fourth data signal input
107a Data signal output
107b Data signal output
108 First n-MOS logic selection transistor
109 Second n-MOS logic selection transistor
110 Third n-MOS logic selection transistor
111 Fourth n-MOS logic selection transistor
112 First n-MOS data signal transistor
113 Second n-MOS data signal transistor
114 Third n-MOS data signal transistor
115 Fourth n-MOS data signal transistor
116 First p-MOS logic selection transistor
117 Second p-MOS logic selection transistor
118 Third p-MOS logic selection transistor
119 Fourth p-MOS logic selection transistor
120 First p-MOS data signal transistor
121 Second p-MOS data signal transistor
122 Third p-MOS data signal transistor
123 Fourth p-MOS data signal transistor
124 First inverter
125 Second inverter
126 Ground potential
127 Supply potential

128 Third inverter
129 First n-MOS logic transistor
130 Second n-MOS logic transistor
131 First p-MOS logic transistor
132 Second p-MOS logic transistor
140 First logic function block
150 Second logic function block
160 First logic function block
170 Second logic function block
200 Table
300 Logic function block
301 First inverter circuit
302 First n-MOS inverter transistor
303 First p-MOS inverter transistor
304 Second inverter circuit
305 Second n-MOS inverter transistor
306 Second p-MOS inverter transistor
307 Supply potential
308 Ground potential
309 Signal path unit
310 First signal path input
311 Second signal path input
312 Third signal path input
313 Fourth signal path input
314 First p-MOS logic transistor
315 Second p-MOS logic transistor
316 Third p-MOS logic transistor
317 Fourth p-MOS logic transistor
318 Fifth p-MOS logic transistor
319 Sixth p-MOS logic transistor
320 Seventh p-MOS logic transistor
321 Eighth p-MOS logic transistor
322 Ninth p-MOS logic transistor
323 Tenth p-MOS logic transistor
324 Eleventh p-MOS logic transistor